AMENDMENTS TO THE SPECIFICATION:

Page 1, amend the paragraph beginning at line 4 as follows:

International Patent Application No. WO99/46768 published September 16, 1999 (~~Secretary of State for Defence~~corresponding to US Application No. 09/622,405 filed August 17, 2000) describes an imaging system which includes a diffraction grating which is distorted substantially according to a quadratic function to cause images to be formed under varying focus conditions. Our copending UK Patent Application No. 0205240.5 relates to a system for determining data relating to the local shape (or local phase distribution) of a radiation wavefront, and certain embodiments of that apparatus comprise such a distorted diffraction grating.

Page 3, after the last paragraph (the paragraph beginning at line 24), insert the following:

The invention will now be described, by way of example only, with reference to the following drawings in which:

Figure 1 illustrates a first transmissive radiation focussing element of the present invention carrying a layer in which a diffraction grating is formed;

Figure 2 illustrates a second transmissive radiation focussing element of the present invention having a surface moulded to form a diffraction grating;

Figure 3 illustrates a reflective radiation focussing element of the present invention carrying a layer in which a diffraction grating is formed;

Figure 4 illustrates a reflective radiation focussing element of the present invention having a surface moulded to form a diffraction grating; and

Figure 5 is a schematice illustration of a simple imaging system with the focussing element of the present invention.

Referring to figure 1, a radiation transmissive lens 2 is shown. The lens carries a layer 4 on one surface in which a diffraction grating is formed. The diffraction grating formed in layer 4 is distorted substantially according to a quadratic function and comprises an amplitude grating (although it could be a phase grating). The lens 2 further comprises a mask 6 provided on the surface of the lens 2 to provide an aperture; the mask 6 and layer 4 are provided on opposed surfaces of the lens. The structure shown in figure 1 may be fabricated using a variety of different techniques as described above.

Referring to figure 2, a further radiation transmissive lens 8 is shown. The first surface 10 of the lens 8 is shaped to define a diffraction grating distorted substantially according to a quadratic function and comprises a phase grating (although it could be an amplitude grating). The grating surface 10 and a mask 11 may be provided on the same surface of the lens. The structure shown in figure 2 may be fabricated using a variety of different techniques as described above.

Referring to figure 3, a radiation reflective focussing element 12 is shown. The element 12 carries layer 14 on its reflective surface. Layer 14 is distorted substantially according to a quadratic function. The structure shown in figure 3 may be fabricated using a variety of different techniques as described above.

Referring to figure 4, a radiation reflective focussing element 16 is shown. The reflective surface 18 of the element 16 is shaped to define a diffraction grating distorted substantially according to a quadratic function. The structure shown in figure 4 may be fabricated using a variety of different techniques as described above.

Figure 5 shows a simple three dimensional imaging system as described in WO99/46768 (figure 10 and page 6) which utilizes a focussing element in accordance with the present

invention, i.e., focussing element 3 located in optical system 1. As discussed in more detail in WO99/46768, objects 5, 7 and 9 are located at different distances from the focussing element are imaged simultaneously and spatially separated on a single plane B. Such systems can also be used as a wavefront sensor.